

What Is Claimed Is:

1. A device for determining at least one parameter of a medium flowing in a line (3) in a main flow direction (18), particularly a parameter of the intake air mass of an internal combustion engine, having a part (6), which can be inserted into the line (3) at a predetermined alignment with respect to the main flow direction (18) in such a way that a partial flow of the medium flowing in the line in the main flow direction (18) flows through at least one measuring channel (40) provided in the part (6) in a first direction (a) from an intake (41) of the measuring channel to an outlet (49) of the measuring channel, and having at least one measuring element (9) situated in the measuring channel (40) for determining the at least one parameter,

wherein the measuring channel (40) between its intake (41) and its outlet (49) features at least one channel segment (45), in which means (46,55) are located that cause flow vortices in this channel segment.

2. The device as recited in Claim 1,

wherein the channel segment (45) provided with the means (46,55) is situated, when viewed in the first direction (a), between the measuring element (9) and the outlet (41) of the measuring channel (40), and the means (46,55), especially in the case of a return flow of the medium flowing from the outlet (49) to the intake (41) of the measuring channel in a second direction (b) counter to the first direction (a), cause flow vortices in the channel segment (45).

3. The device as recited in one of Claims 1 or 2,

wherein the means (46,55) are formed by structuring the inner wall (45a) of the channel segment (45).

4. The device as recited in Claim 3,

wherein the inner wall (45a) features steps, edges, projections or similar geometries suitable for generating flow vortices.

5. The device as recited in Claim 3 or 4,

wherein the inner wall (45a) of the channel segment (45) features at least one step (46) and preferably a plurality of steps (46) arranged in series.

6. The device as recited in Claim 5,

wherein at least one step (46) is formed on opposite inner walls of the channel segment (45).

7. The device as recited in Claim 5,

wherein the measuring channel (40) features a first segment (44) having an interior cross-section continuously tapering in the first direction (a), and the first segment (44) being mediately or immediately followed by a further segment (45) having an interior cross-section increasing by steps in the first direction (a).

8. The device as recited in one of Claims 3 through 7,
wherein the at least one step (46) features an edge (57) running at least partly at an angle and/or at least partly transversely to the direction of flow of the medium in the measuring channel (40).

9. The device as recited in one of Claims 3 through 8,
wherein the at least one step (46) features an edge (57) running essentially transversely to the direction of flow of the medium in the measuring channel (40), and the step (46) features a recess (47) opening towards the edge (57) of the step, the edges (47a) of recess (47) running at least partly at an angle or parallel to the direction of flow of the medium in the measuring channel (40).

10. The device as recited in Claim 3 or 4,
wherein the inner wall (45a) of the channel segment (45) is provided with structures, the edges of which run approximately along the direction of flow in the measuring channel (40).

11. The device as recited in Claim 10,
wherein the structures are formed by inwardly projecting longitudinal ribs (55) running along the direction of flow in the measuring channel (40), which are preferably distributed in this channel segment (45) over the entire inner circumference of the inner wall (45a).